SONY

3-800-731-12 (1)

VideoSig Menu
Problem Resolution Menu

Trinitron®
Color Video Monitor

Trinitron

PVM-14N1A/14N1E/14N1U
PVM-14N2A/14N2E/14N2U
PVM-20N1A/20N1E/20N1 U
PVM-20N2A/20N2E/20N2U

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English

Owner's Record

The model and serial numbers are located at the rear. Record these numbers in the spaces provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____
Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltage are present inside the unit.
Do not open the cabinet. Refer servicing to qualified personnel only.

In the event of a malfunction or when maintenance is necessary, consult an authorized Sony dealer.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

For the customers in Canada

This Class A digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

For the customers in the United Kingdom

WARNING

THIS APPARATUS MUST BE EARTHED

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Ensure that your equipment is connected correctly - If you are in any doubt consult a qualified electrician.

Precaution

On safety

- Operate the unit only with a power source as specified in "Specifications" section.
- The nameplate indicating operating voltage, power consumption, etc., is located at the rear.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the unit with a damaged power cord.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- Disconnect the power cord from the AC outlet by grasping the plug, not by pulling the cord.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.

On installation

- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On cleaning

To keep the unit looking brand-new, periodically clean it with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since they will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

On repacking

Do not throw away the carton and packing materials. They make an ideal container which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony dealer.

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About this manual

Before operating the unit, please read this manual thoroughly and retain it for future reference.

The explanation given in this manual can be applied to the following models unless noted otherwise.
When explanation differs among models, this is clearly indicated in this manual.

- PVM-14N1A/l4N1E/14NlU (14-inch monitor)
- PVM-l4N2A/l4N2E/l4N2U (14-inch monitor)
- PVM-20NlA/20NlE/20NlU (20-inch monitor)
- PVM-20N2A/20N2E/20N2U (20-inch monitor)

Illustrations of the video monitor are for the PVM-20N2A/20N2E/20N2U.

English

Features

Picture

Fine pitch Trinitron[1] picture tube
The fine pitch trinitron tube provides a high resolution picture. Horizontal resolution is more than 500 TV lines at the center of the picture.

Comb filter
When NTSC video signals are received, a comb filter activates to make more accurate Y/C separation. This contributes to less of a decrease in resolution, cross color and cross luminance phenomena.

Beam current feedback circuit
The built-in beam current feedback circuit assures stable white balance.

Four color system available
The monitor can display NTSC, PAL, SECAM and NTSC4.43[2] signals. The appropriate color system is selected automatically.

Input

Analog RGB inputconnectors (for PVM-I4N2A/I4N2E/I4N2U/2ON2A/2ON2E/ 2ON2U only)
Analog RGB signals from video equipment can be input through these connectors.

Y/C input connectors
The video signal, split into the chrominance signal (C) and the luminance signal (Y), can be input through this connector. eliminating the interference between the two signals. which tends to occur in a composite video signal, ensuring video quality.

Automatictermination (connector with -⋀⋁- mark only)
The input connector is terminated at 75 ohms inside when no cable is connected to the loop-through output connector. When a cable is connected to an output connector. the 75-ohm termination is automatically released.

Functions

On-screenmenus
You can set monitor operation settings by using the on-screen menus.

EIA standard 19-inch rack mounting
By using an MB-502B mounting bracket (for a 14-inch monitor, not supplied) or SLR- 103A slide rail (for a 20-inch monitor, not supplied), the monitor can be mounted in an EIA standard 19-inch rack.

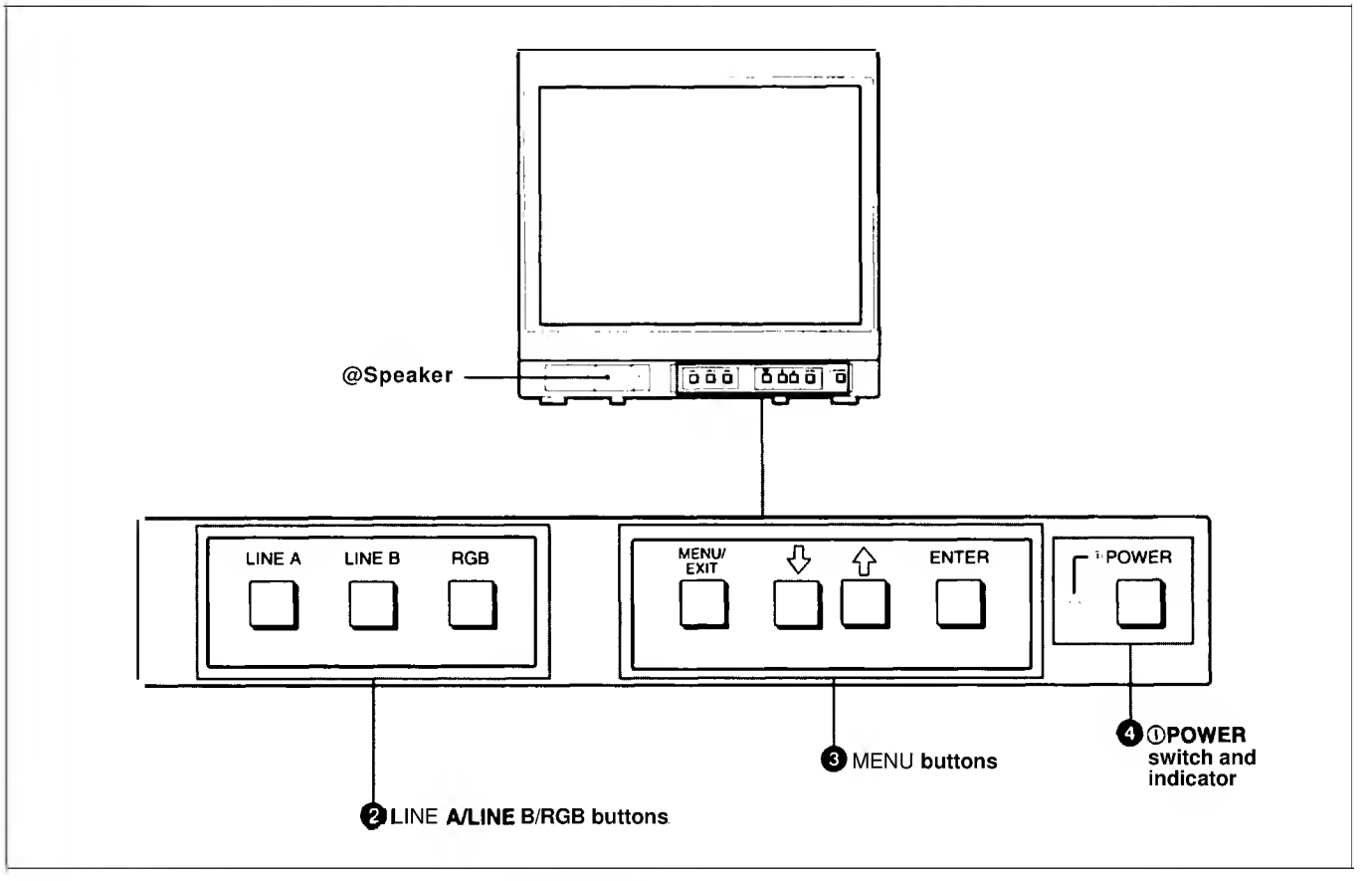
For details on mounting, refer to the instruction manuals supplied with the mounting bracket kit or slide rail kit.

1) "Trinitron" is a registered trademark of Sony Corporation.

2) The NTSC4.43 system refers to an NTSC color system in which the subcarrier frequency is modified to 4.43MHz. When an NTSC recorded video program is played back with a Trident (PAL/SECAM/NTSC4.43) VTR, the **NTSC4.43** signal is output.

Location and Function of Parts and Controls

Front



PVM-20N2A/20N2E/20N2U front panel

❶ Speaker

❷ LINE A/LINE B/RGB (input select) buttons

Press to select the program to be monitored.

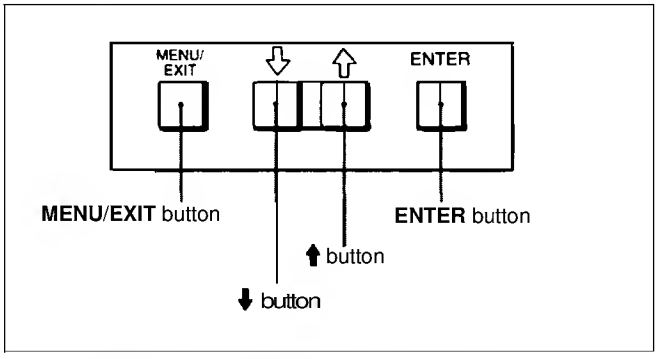
Input signal	Press
Signal fed through the LINE A connector	LINE A
Signal fed through the LINE B connector	LINE B
Signal fed through the RGB connectors[a)]	RGB[a)]

a) Provided with the PVM-14N2A/14N2E/14N2U/20N2A/20N2E/20N2U only.

❸ MENU buttons

Press to make the menu appear.

For detailed information on MENU buttons, see "Operation through On-Screen Menus" on page 9.

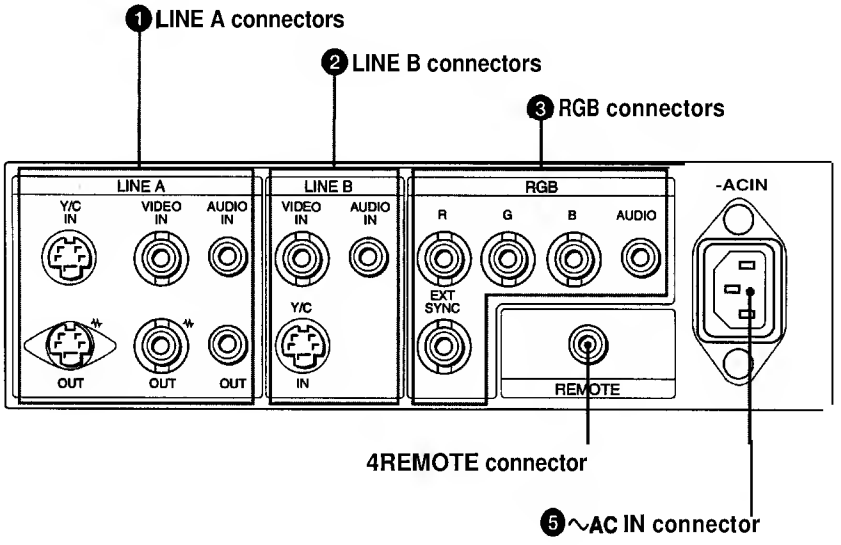


❹ (1)POWER switch and indicator

Press to turn the monitor on. The indicator lights in green.

To turn the power off, press this again.

Rear Panel



(The ⩘ mark indicates automatic termination.)

PVM-2ON2A/2ON2E/2ON2U rear panel

1 LINE A connectors

Input connectors for the composite video, Y/C separate video and audio signals and their loop-through output connectors.
To monitor the input signal fed through these connectors, press the LINE A button on the front panel.

Note

The Y/C IN connector has priority over the VIDEO IN connector.
When connecting the cable to the Y/C IN connector, the Y/C IN connector is automatically selected and the VIDEO IN connector is disconnected even if the cable is connected.

Y/C IN connector (4-pin mini-DIN)
Connect to the Y/C separate output connector of a video camera, VCR or other video equipment.

Y/C OUT connector (4-pin mini-DIN)
Loop-through output of the Y/C IN connector. Connect to the Y/C separate input connector of a VCR or another monitor.

When the cable is connected to this connector, the 75-ohm termination of the input is automatically released, and the signal input to the Y/C IN connector is output from this connector.

VIDEO IN connector (BNC-type)
Connect to the video output connector of video equipment, such as a VCR or a color video camera. For a loop-through connection, connect to the video output connector of another monitor.

VIDEO OUT connector (BNC-type)
Loop-through output connector of the VIDEO IN connector. Connect to the video input connector for a VCR or another monitor.
When the cable is connected to this connector, the 75-ohm termination of the input is automatically released, and the signal input to the VIDEO IN connector is output from this connector.

AUDIO IN connector (phono jack)
Connect to the audio output connector of a VCR or other equipment. For a loop-through connection, connect to the audio output of another monitor.

AUDIO OUT connector (phono jack)
Loop-through output of the AUDIO IN connector. Connect to the audio input connector of a VCR or another monitor.

❷ LINE B connectors

Input connectors for the composite video, Y/C separate video and audio signals.
To monitor the input signal fed through these connectors, press the LINE B button on the front panel.

Y/C IN connector (4-pin mini-DIN)
Connect to the Y/C separate output connector of a video camera, VCR or other video equipment.

VIDEO IN connector (BNC-type)
Connect to the video output connector of video equipment, such as a VCR or a color video camera. For a loop-through connection, connect to the video output connector of another monitor.

AUDIO IN connector (phono jack)
Connect to the audio output connector of a VCR or other equipment. For a loop-through connection, connect to the audio output of another monitor.

❸ RGB connectors (provided with the PVM-I4N2A/I4N2E/ 14N2U /20N2A/20N2E/20N2U only)

Analog RGB input connectors for the R/G/B signals, external sync signals and audio signals.
To monitor the input signal fed through these connectors, press the RGB button on the front panel.

R/G/B (input) connectors (BNC-type)
Connect to the analog RGB outputs connectors of a video camera, VCR or other video equipment. The monitor operates on the external sync signal.
The monitor also can operate on the sync signal from the G channel by setting RGB SYNC to SYNC ON GREEN in the menu.

For detailed information on sync signal setting, see [3a] RGB SYNC menu "on page 12 of "Functions of On-Screen Menus".

AUDIO IN connector (phono jack)
Connect to the audio output connectors of video equipment when the analog RGB signal is input.

EXT SYNC (external sync input) connector (BNC-type)
Connect to the sync signal output of a video camera, VCR or other video equipment.
When you set RGB SYNC to SYNC ON GREEN in the menu, the monitor operates on the sync signal from the G channel so that it is not necessary to use this connector.

For detailed information on sync signal setting, see "3a RGB SYNC menu "on page 12 of "Functions of On-Screen Menus".

❹ REMOTE connector (phono jack) (provided with the PVM-I4N2A/I4N2E/ 14N2U /20N2A/20N2E/20N2U only)

This connector functions as follows.
Open: When this connector is open, the current input signal is selected.
Ground: By grounding this connector, the input signal selected before this current signal is selected.

❺ ∿AC IN (inlet) connector

Connect the supplied AC power cord to this connector and to a wall outlet.

Using On-Screen Menus

You can make various settings and adjustments of the monitor using the on-screen menus.

On-Screen Menu Configuration

The on-screen menu is composed of the following two menu types.

Item selection menu

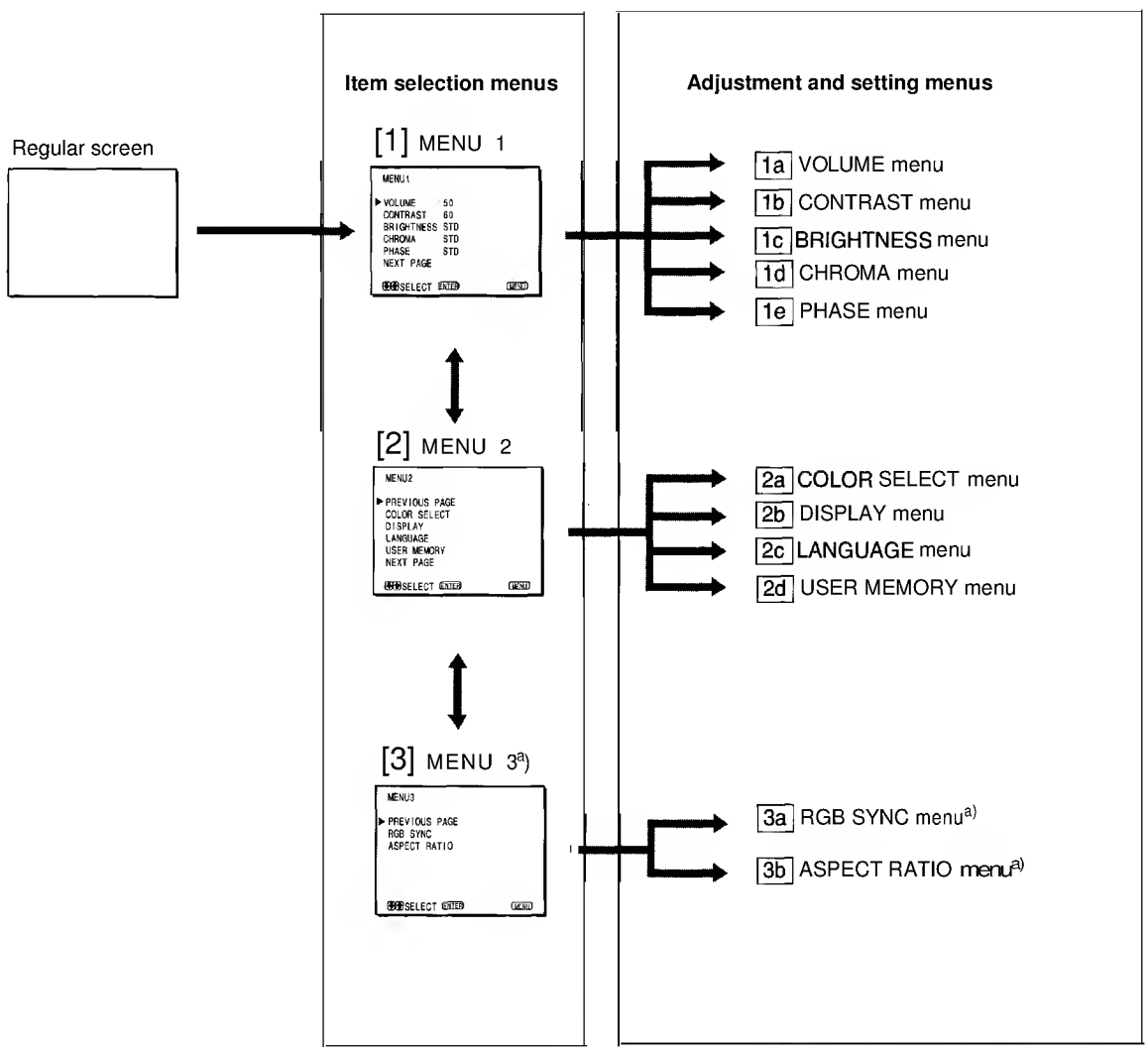
You can select an adjustment and setting item such as sound volume, contrast, brightness, color intensity, color system and menu language by using the ↑,↓ and ENTER buttons.

Adjustment and setting menus

You can make desired adjustment or setting on corresponding menu. The settings and adjustments remain unchanged until next adjustment even if you turn off the power.

To reset the settings and adjustments to the factory-settings, select " FACTORY PRESET" from 2d USER MEMORY menu.

On-screen menu tree-chart

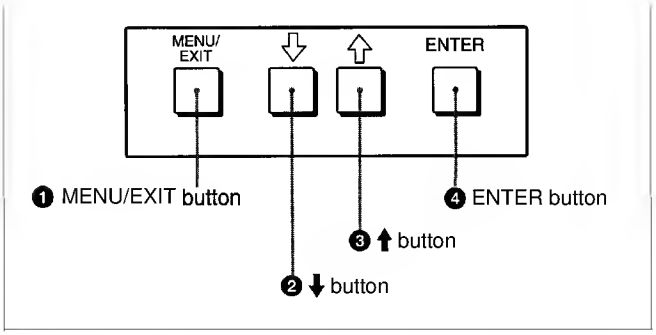


a) These menus ([3] [3a] and 3b) are provided with PVM-l4N2A/l4N2E/l4N2U /20N2A/20N2E/20N2U only.

Operation through On-Screen Menus

Menu operation buttons

There are four menu operation buttons on the front panel of the monitor.

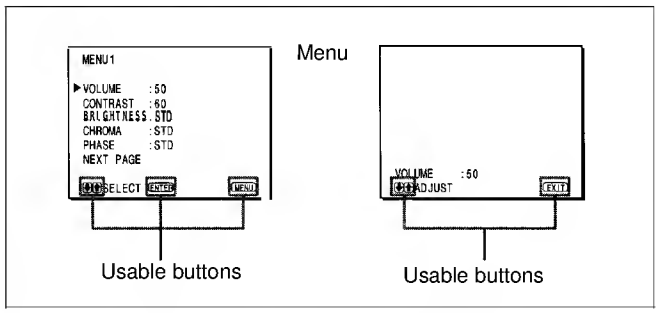


Button functions depend on the displayed menu. The following table shows the button functions on the item selection menus and adjustment and setting menus.

Button	Function on the item selection menus	Function on the adjustment and setting menus
❶ MENU/EXIT	To return to the regular screen.	To return to the item selection menu.
❷ ↓	To move the cursor downward.	To decrease value/select item.
❸ ↑	To move the cursor upward.	To increase value/select item.
❹ ENTER	To decide a selected item.	To decide a selected item[a].

a) You can use the ENTER button only on the 2d USER MEMORY menu of the adjustment and setting menus.

Usable buttons depend on the displayed menu. Buttons that can be used on the menu are displayed at the bottom line of the screen. You can perform menu operation using displayed buttons.



Display of the usable menu operation buttons

Operating pro&lures

To display the menu, follow this procedure.

1 Press the MENU/EXIT (❶) button.

| MENU 1 appears.

To select items other than ones not displayed on MENU 1

Select | MENU 2 or | MENU 3 [1].

For details of how to select, see the "To change the item selection menus" described later.

2 Move the cursor to the desired item by pressing the ↓ or ↑ (❷, ❸) button.

3 Press the ENTER (❹) button.

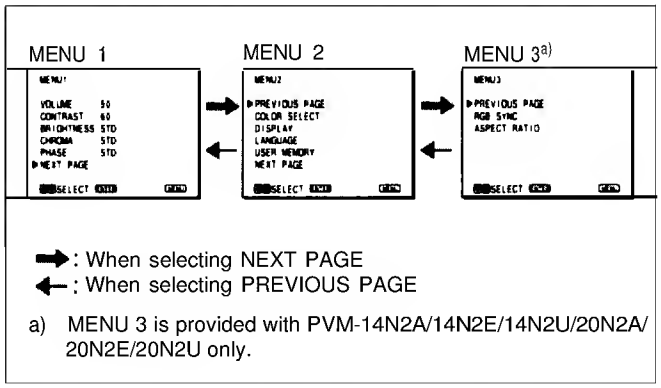
The adjustment and setting menu selected in step **2** appears.

For detailed information of menus, see "Functions of On-Screen Menus" on page 10.

1) | MENU 3 is provided with PVM-14N2A/14N2E/14N2U/20N2A/20N2E/20N2U only.

To change the item selection menus

Select NEXT PAGE on the menu to display next item selection menu and PREVIOUS PAGE on the menu to display the previous item selection menu.



➡: When selecting NEXT PAGE
⬅: When selecting PREVIOUS PAGE

a) MENU 3 is provided with PVM-14N2A/14N2E/14N2U/20N2A/20N2E/20N2U only.

How to change the item selection menu

To return to the item selection menu from the adjustment and setting menus

Press the MENU/EXIT (❶) botton on the currently displayed adjustment and setting menu.

To close the menu (to return to the regular screen)

Press the MENU/EXIT (❶) button when the item selection menu is displayed. The on-screen menu disappears and the regular screen appears.

Functions of On-Screen Menus

Item selection menus

[1] MENU 1

MENU 1 menu has the following selection items.

Item	Functions
VOLUME	To obtain the desired volume
CONTRAST	To adjust the contrast
BRIGHTNESS	To adjust the brightness
CHROMA	To adjust the color intensity
PHASE	To adjust the phase

[2] MENU 2

MENU 2 menu has the following selection items.

Item	Function
COLOR SELECT	To select the color system of the input signal
DISPLAY	To select period of display
LANGUAGE	To select the menu language
USER MEMORY	To store and recall the values and settings adjusted by a user, and recall the factory-settings

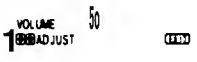
[3] MENU 3 (for PVM-142A/14N2E/14N2U/20N2A/20N2E/20N2U only)

MENU 3 menu has the following selection items.

Item	Function
RGB SYNC	To select the sync signal when the RGB signals are input
ASPECT RATIO	To select the aspect ratio

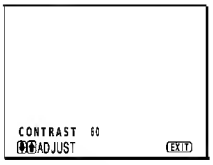
Adjustment and setting menu

[1a] VOLUME menu (Factory setting: 50)



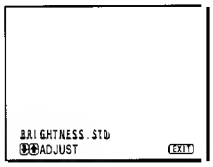
Adjust the speaker volume.
The volume increases by pressing the ↑ button.
The volume decreases by pressing ↓ button.

1b CONTRAST menu (Factory setting: 60)



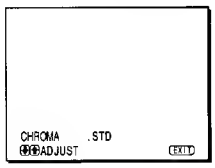
Adjust the contrast of the screen.
The contrast becomes higher by pressing the ↑ button.
The contrast becomes lower by pressing ↓ button.

1c BRIGHTNESS menu (Factory setting: STD)



Adjust the brightness of the screen.
The screen becomes brighter by pressing the ↑ button.
The screen becomes darker by pressing ↓ button.

1d CHROMA menu (Factory setting: STD)

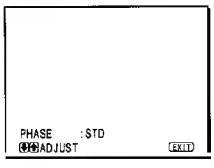


Adjust the color intensity of the video signal.
The color intensity strengthens by pressing the ↑ button.
The color intensity weakens by pressing ↓ button.

Note

The color intensity of an composite video signal or a Y/C separate signal can be corrected on this menu. That of the RGB signals cannot be corrected.

1e PHASE menu (Factory setting: STD)

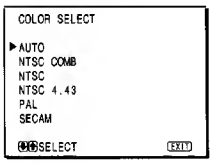


Adjust the phase of the video signals.
The skin tone becomes greenish by pressing the ↑ button.
The skin tone becomes purplish by pressing the ↓ button.

Note

The phase of an NTSC composite video signal or a Y/C separate signal can be corrected on this menu. The PAL composite video signal or a Y/C separate signal and RGB signals cannot be corrected.

2a COLOR SELECT menu (Factory setting: AUTO)



Select the color system of the input signal.
AUTO: Input color systems are automatically, selected. When you input NTSC signal, trap filter will activate. To monitor NTSC signal with comb filter, select NTSC COMB in this menu.

2b DISPLAY menu (Factory setting: SHORT TIME)

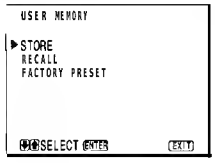
Select the period of displaying the color system of the current input signals.
The items have the following functions.

Item	Function
SHORT TIME	To display the kind of color system being used for several seconds on the screen each time you change the signal input.
LONG TIME	To display the kind of color system being used for approximately five minutes on the screen each time you change the signal input.
OFF	Not to display the kind of the color system.

2c LANGUAGE menu (Factory setting: ENGLISH)

Select the menu language among the five languages, English, German, French, Italian and Spanish.

2d USER MEMORY menu

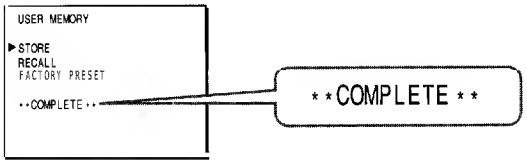


The items have the following functions.

Item	Function
STORE	To store all adjustments and settings currently set on each menu into the internal memory.
RECALL	To recall all adjustments and settings currently stored in the internal memory.
FACTORY PRESET	To reset the adjustments and settings currently set on each menu to the factory settings.[a]

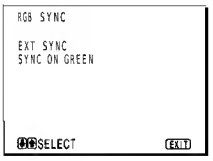
a) The current settings and adjusted values are reset to the factory settings. The values and settings adjusted and stored in the internal memory by using the STORE menu, however, are not changed. To reset internally stored adjusted values and settings to the factory setting, select FACTORY PRESET, first, then select STORE.

When you press the ENTER (❹) button, the following message is displayed for about two seconds. The currently selected item becomes active when pressing the ENTER (❹) button.



The following menus are provided with the PVM-14N2A/l4N2E/l4N2U /PVM-20N2A/20N2E/20N2U only.

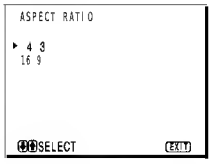
3a RGB SYNC menu (Factory setting: EXT SYNC)



Select the sync signal when the RGB signals are input. The items have the following functions.

Item	Function
EXT SYNC	To operate the monitor on an external sync signal fed through the RGB SYNC connector.
SYNC ON GREEN	To operate the monitor on the sync signal from the G channel.

3b ASPECT RATIO menu (Factory setting: 4:3)

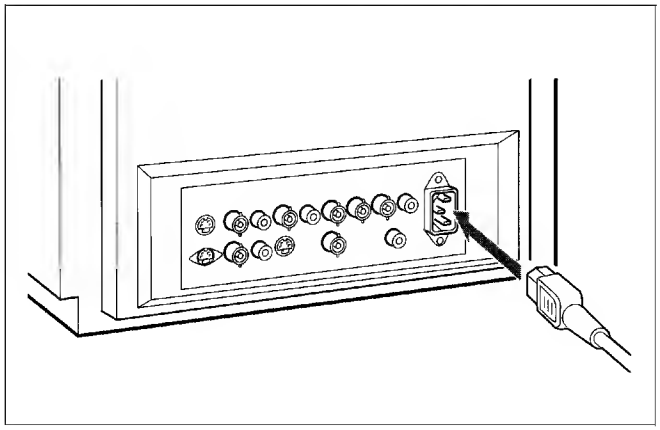


Select the aspect ratio of the screen.

Connections

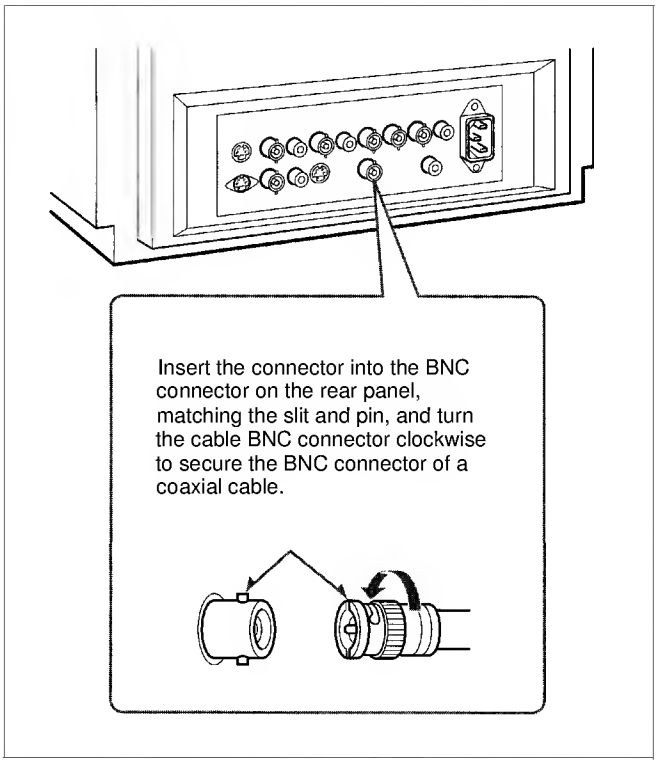
How to Connect the AC Power Cord

Connect the AC power cord (supplied) to the ~AC IN connector and to a wall outlet.



How to Connect a Cable to a BNC Connector

Connect the coaxial cable with the BNC connectors to the BNC connectors on the rear panel as illustrated below.


Insert the connector into the BNC connector on the rear panel, matching the slit and pin, and turn the cable BNC connector clockwise to secure the BNC connector of a coaxial cable.

Specifications

Video signal

Color system	NTSC, PAL, SECAM,
Resolution	500 TV lines
Frequency response	
LINE	6 MHz±3dB (Y signal)
RGB	6 MHz±3dB

Picture performance

Normal scan	7 % over scan of CRT effective screen area
H. linearity	Less than 8.0 % (typical)
V. linearity	Less than 7.0 % (typical)
Color temperature	6,500 K

Inputs

LINE A/B

Y/C IN	4-pin mini-DIN(X2) See *the pin assignment on the next page.*
VIDEO IN	BNC connector (X2), 1Vp-p +3 dB, -6 dB, sync negative
AUDIO IN	Phono jack (X2), **-5** dBu[a]), more than 47 kilo-ohms

RGB (PVM-l4N2A/l4N2E/l4N2U/20N2A/20N2E/20N2U only)

R/G/B	BNC connector (X3) 0.7 Vp-p +3 dB, -6 dB Sync on green: 0.3 Vp-p, negative, Automatic 75 ohms termination
AUDIO IN	Phono jack (xl), -5 dBu[a]), more than 47 kilo-ohms
EXT SYNC	BNC connector (Xl) 4 Vp-p +3 dB, -6 dB, sync negative

REMOTE (PVM-l4N2A/l4N2E/l4N2U/20N2A/20N2E/20N2U only)

Phono jack (Xl)
Open: currently selected input signal
Low state (GND): input signal selected prior to the current input signal

a) *0 dBu = 0.775 Vr.m.s.*

Outputs

LINE A

Y/C OUT 4-pin mini-DIN (x1) loop-through, Automatic 75 ohms termination

VIDEO OUT BNC connector (x1) loop-through, Automatic 75 ohms termination

AUDIO OUT Phono jack (x1) loop-through

Speaker output Output level: 0.8 W

General

CRT PVM-14N1A/14N1E/14N1U/ 14N2A/14N2E/14N2U: 14-inch CRT with P-22 phosphor Visible picture size 340 mm (13-inch measured diagonally)

PVM-20N1A/20N1E/20N1U/ 20N2A/20N2E/20N2U: 20-inch CRT with P-22 phosphor Visible picture size 490 mm (19-inch measured diagonally)

Power consumption

PVM-14N1A/14N1E/14N1U: 80W

PVM-14N2A/14N2E/14N2U: 80W

PVM-20N1U/20N2U: 100W

PVM-20N1 A/20N2A/20N1E/ 20N2E: 105 W

Power requirements

100 to 240 V AC, 50/60Hz

"For use of PVM-14N/ U/14N2U/ 20N1U/20N2 U", operate these monitors on 120 *V AC.*

Operating temperature

0 to +35°C (32 to 95°F)

Storage temperature

-10 to +40°C (14 to 104°F)

Relative humidity 0 to 90 %

Dimensions (w/h/d)

PVM-14N1A/14N1E/14N1U/ 14N2A/14N2E/14N2U: 346X340x414 mm ($13\frac{5}{8}$ x $13\frac{1}{2}$ x $16\frac{3}{8}$ inches)

PVM-20N1A/20N1E/20N1U/ 20N2A/20N2E/20N2U: 449X441x502mm ($17\frac{3}{4}$ x $17\frac{3}{8}$ X $19\frac{7}{8}$ inches)

Mass PVM-14N1A/14N1E/14N1U/ 14N2A/14N2E/14N2U: Approx. 15 kg (33 lb 1 oz)

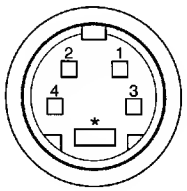
PVM-20N1A/20N1E/20N1U/ 20N2A/20N2E/20N2U: Approx. 28 kg (61 lb 12 oz)

Accesory supplied AC power cord (1)

Operating Instructions (1)

Pin assignment

Y/C IN connector (4-pin mini-DIN)



Pin No.	Signal	Description
1	Y-input	1 Vp-p, sync negative, 75 ohms
2	CHROMA subcarrier-input	0.286 Vp-p (NTSC), 300m Vp-p (PAL), burst Delay time between Y and C: within 0 ± 100 nsec., 75 ohms
3	GND for Y-input	GND
4	GND for CHROMA-input	GND

Design and specifications are subject to change without notice.

Troubleshooting

This section may help you isolate the problem. Should the problem persist, unplug the unit and contact your Sony dealer or local authorized Sony service facility.

Symptom	Possible causes and remedies
If noise is generated on the screen when the color system of the input signal is changed in AUTO mode selected on the COLOR SELECT menu	It takes approximately two seconds to automatically detect the color system. After detecting the color system, the picture will be stable.
If noise is generated on the screen when the NTSC COMB mode is selected on the COLOR SELECT menu	When an unstable input signal may generate noise seen on the screen. Select the NTSC mode on the COLOR SELECT menu.
If the horizontal lines will intermittently appear on the upper screen, wlme 16:9 aspect ratio is selected on the ASPECT RATIO menu	This is for beam current feedback. These horizontal liens disappear when the white balance is stabilized.
If colors are not accurately reproduced	The monitor input signal is deviated from the color system specifications (i.e. signals from VCRs). Proceed as follows to correct this phenomenon. **1** Confirm the color system of the input signal. **2** Select the same color system as that of the input signal on the COLOR SELECT menu. If the problem remains unsolved after corresponding color system is selected, briefly turn OFF the power, then turn ON the monitor again.